learning
of a to count
bright future

Patagonia Elementary No. 6 P.O. Box 295 Patagonia, Arizona 85624

January 6, 1997

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Ph: 602 - 394-2972

Fax: 602 - 394-2085

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

The Honorable Reed Hundt Chairman Federal Communications Commission 1919 M Street, N.W., Room 814 Washington, D.C. 20554

RE: CC Docket No. 96-45

Dear Chairman Hundt:

I am a school board member from the Patagonia Elementary School District in Patagonia, AZ, and I would like to thank you for your leadership and the leadership of the Joint Board for their strong decision to ensure that all schools will have affordable access to the Information Superhighway. I urge the FCC to fully adopt the recommendations of the Joint Board.

The discount range of 20 to 90 percent will ensure that our school which is among the poorest--will have truly affordable access. The plan is also very flexible and will empower schools to select the services that work best for their educational mission. The inclusion of discounts on internal connections and Internet access is equally vital and stands to bring services directly to the classroom where students learn.

Our district is in need of more technology in the classroom but at this time the costs are prohibitive. If these discounts are realized we can begin to provide technological learning opportunities for our students.

As you move ahead in your deliberation on this important issue, I urge you to assist us in providing all school children equitable learning opportunities.

Sincerely,

Irma Sang

Governing Board Member

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(C:96-45

Some Unique Features of the Telecom Economic Cost Model

- 1. Analyzes one wire center at a time
 - a. Allows every input to precisely match specific circumstances
 - b. Encourages deeper understanding of the cost estimates
 - c. Allows numerous, nearly-instantaneous comparisons
- 2. User provided with additional, particularly useful inputs
 - a. Carrier market share(s)
 - b. Hourly labor costs
 - c. Detailed labor time requirements (cable)
 - d. Two-criteria fiber/copper breakpoint

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3. Analyzes numerous different types of economic cost

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- a. Long Run Average Cost (LRAC)
 - i. Residence/Business Combined Network
 - ii. Stand Alone Cost of Residence Only Network
 - iii. Stand Alone Cost of Business Only Network
- b. Total Element Long Run Incremental Cost (TELRIC)
- c. Total Service Long Run Incremental Cost (TSLRIC)
 - i. Residence incremental to business
 - ii. Business incremental to residence
 - iii. Other specified group of incremental customers
- d. Long Run Marginal Cost (LRMC)
 - i. Rate of change in total cost as output increases

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Some Advantages of the Telecom Economic Cost Model

- 1. Facilitates More Precise Cost Estimates
- 2. Facilitates **Deeper Understanding** of Underlying Factors/Relationships
- 3. Facilitates Better Decision Making

(M:9645

Some Thoughts on Evaluating the Models and Their Inputs

- 1. None of the models are perfect
 - a. Each model has strengths/weaknesses
 - b. Each model has room for further improvement
 - c. Each model continues to evolve/improve
- 2. Don't confuse opinions concerning outputs, models, inputs
 - a. Outputs are a function of inputs and model structure/algorithms
 - b. Match inputs and the resulting outputs are relatively similar
 - c. Need to improve accuracy of inputs
 - i. Need to give affected parties opportunity to comment/debate
 - ii. Need to gather more data, facts
 - d. Differences in outputs are more a function of input choices than of differences in model structure
 - e. With right inputs, any/all of the 3 models can do the job

The Hatfield Model

Modeling the Forward-Looking Economic Costs of Universal Service and Unbundled Network Elements

Model Developed by Hatfield Associates for AT&T and MCI

DERAL COMMENSATIONS COMMISSION

Joint Board Workshops

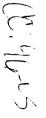
Washington, DC

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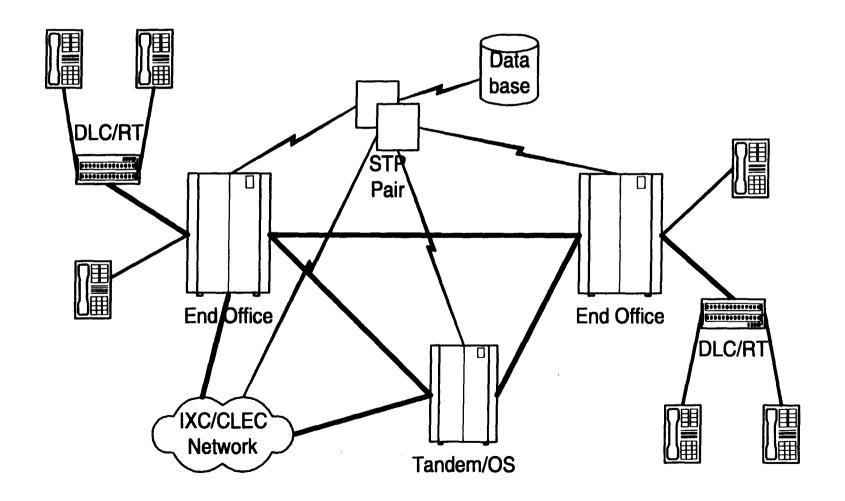
January 14, 1997

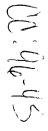
What is the Hatfield Model?

- A model of a reconstructed local exchange network that assumes:
 - ➤ Modern technology, in efficient network configurations, operated efficiently
 - ➤ Wire centers remain in their current locations
 - ➤ All narrowband demand is served
- Calculates the forward-looking economic cost of:
 - ➤ Universal service
 - ➤ Unbundled network elements
 - ➤ Access service, interconnection, etc.

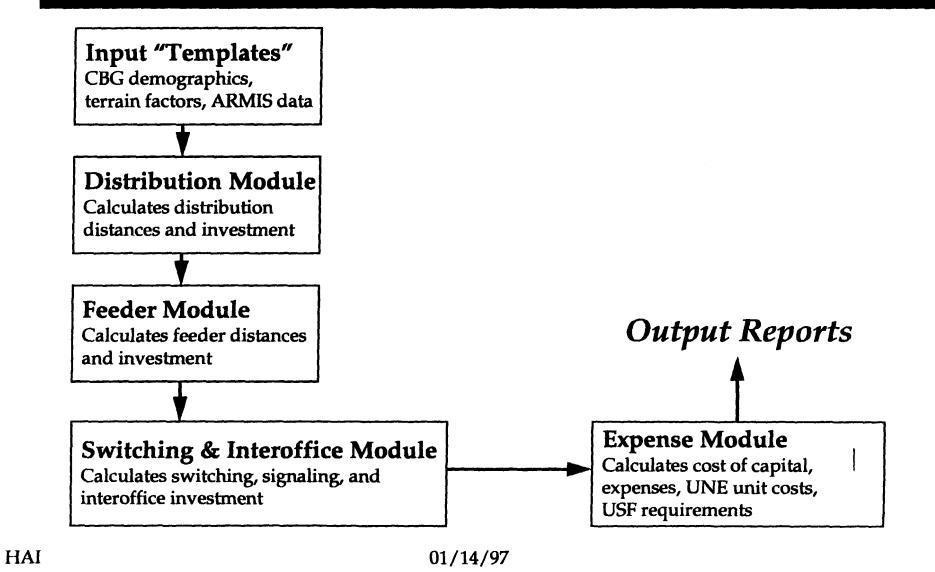


Complete local network modeled



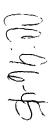


Release 3 flowchart



Release 3 enhancements

- CBGs assigned to wire centers based on NPA-NXXs of inhabitants
- Estimates of number of residence and business lines in each CBG further refined
- Improved modeling of feeder/distribution network
 - ➤ Number and length of distribution cables
 - ➤ Engineering of long loops
 - ➤ Recognition of economies from serving multipleunit dwellings



Release 3 enhancements

- Investment and cost results displayed by CBG, wire center, or density zone
- Expanded from six to nine density zones
- Engineering of interoffice fiber rings
- Depreciation calculations by standard plant categories, reflective of net salvage and exclusion of land
- State-specific adjustments for labor costs



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BENCHMARK COST PROXY MODEL (BCPM)

FCC PROXY COST WORKSHOP January 14, 1997

> **PACIFIC BELL SPRINT US WEST**

WHAT IS THIS PROCEEDING ALL ABOUT?

- SELECT A PROXY MODEL FOR MULTIPLE PURPOSES
 - UNIVERSAL SERVICE TARGETING
 - PRICING OF UNBUNDLED ELEMENTS
 - PRICING OF ACCESS CHARGES
- THE IMPACT OF THIS DECISION WILL BE ENORMOUS
 - TENS OF BILLIONS OF DOLLARS
- MUCH RIDES ON THIS DECISION
 - THE QUALITY OF THE NETWORK INTO THE FUTURE
 - THE AFFORDABILITY OF SERVICE IN HIGH COST AREAS
 - THE ABILITY OF CARRIERS TO INVEST AND GROW THE LOCAL NETWORK
- IT IS CRITICAL THAT THIS JOB BE DONE RIGHT
 - IT IS VERY POSSIBLE TO BUILD A CHEAP NETWORK
 - MARKETS WILL REACT TO THE SIGNALS THAT ARE GIVEN
- WE BELIEVE THAT BCPM DOES IT RIGHT
 - REALISTIC DESIGN ASSUMPTIONS
 - HIGH QUALITY DEPENDABLE SERVICE



WHY DO WE NEED A PROXY MODEL?

- COMPETITION REQUIRES HIGH COST SUPPORT TO BE TARGETED
 - TO SMALL AREAS OF GEOGRAPHY
 - LECs KEEP COSTS AT THE STUDY AREA LEVEL
- TO MEET THE JOINT BOARD REQUIREMENTS
 - "We find that forward-looking economic costs should be used to determine the cost of providing universal service. Those costs best approximate the costs that would be incurred by an efficient competitor entering the market."
- TO ALLOW MARKETS TO WORK IN THE FUTURE
 - DEBATE AND AGREE ON THE PARAMETERS AND DATA UP-FRONT
 - SET THE FUNDING FORMULAS AND PRICES
 - LET THE MARKETS WORK!!!

THE BCPM STORY

- TWO GOOD MODELS BCM2 AND BCPM
 - SIMILAR RESULTS
 - COMBINE THE BEST ASPECTS OF EACH
 - ADD SIGNIFICANT IMPROVEMENTS
 - FORWARD-LOOKING COST OF CAPITAL MODULE
 - FLEXIBILITY FOR SMALL COMPANY INPUTS
 - CAPABILITY TO ANALYZE UNBUNDLED NETWORK ELEMENTS
- DEVELOP REASONABLE FORWARD-LOOKING ESTIMATES FOR
 - SWITCH COST INVESTMENT
 - OUTSIDE PLANT INVESTMENT
 - CAPITAL COSTS
 - SUPPORT EXPENSES
- MAKE ALL INPUTS EASILY USER ADJUSTABLE
- FCC AND JOINT BOARD MAY MAKE ANY CHANGES TO MODEL

DOES BCPM MEET THE JOINT **BOARD CRITERIA?**

1.	LEAST COST, MOST EFFICIENT TECHNOLOGY	YES
2.	ALL FLUNCTIONS AND ELEMENTS HAVE COST	YES
3.	ONLY FORWARD-LOOKING COST - NOT EMBEDDED	YES
4.	FORWARD-LOOKING CAPITAL AND ECONOMIC DEPRECIATION	YES
5.	INCLUDE COST OF BUSINESS SERVICES	YES
6.	REASONABLE ALLOCATION OF JOINT AND COMMON COSTS	YES
7.	DATA, FORMULAE, COMPUTATIONS AND SOFTWARE AVAILABLE FOR INSPECTION. ALL DATA VERIFIABLE, ENGINEERING ASSUMPTIONS REASONABLE, AND OUTPUTS PLAUSIBLE	YES
8.	ABILITY TO EXAMINE AND MODIFY CRITICAL ASSUMPTIONS AND ENGINEERING PRINCIPLES	YES



HOW TO DETERMINE THE SUPERIOR MODEL?

- MULTI-DISCIPLINARY EXAMINATION
 - ECONOMIC PRINCIPLES
 - DOES THE MODEL COMPUTE THE RIGHT COSTS?
 - DO THE FACTORS REFLECT AN EFFICIENT NEW MARKET ENTRANT?
 - ENGINEERING PRINCIPLES
 - WILL THE NETWORK FUNCTION TO SPECIFICATIONS?
 - DO SUPPLIERS PROVIDE EQUIPMENT AT MODELED PRICES?
 - DO CONTRACTORS INSTALL EQUIPMENT AT MODELED COSTS?
 - COMPUTER SCIENCE PRINCIPLES
 - DOES THE CODE DO WHAT IT IS SUPPOSED TO?
- VALIDATE THE RESULTS FROM A COMMON SENSE PERSPECTIVE
 - ARE THE RESULTS CONSISTENT WITH PRIOR EXPERIENCE?
 - IF NOT, IS THERE A GOOD REASON?
 - IS THERE A REASONABLE EXPLANATION FOR TRENDS AND CHANGES?
 - ARE RELATIONSHIPS BETWEEN DIFFERENT AREAS OF GEOGRAPHY REASONABLE?





Santa Paula Elementary School District

P.O. Box 710 • 144 Davis Street • Santa Paula, CA 93061-0710 • FAX (805) 933-3023 •

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January 7, 1997

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FEDERAL C HAMMUNICATIONS COMMISSION OFFICE OF SECRETARY

The Honorable Reed Hundt Chairman Federal Communications Commission 1919 M Street, N.W., Room 814 Washington, D.C. 20554

RE:

CC Docket No. 96-45

Dear Chairman Hundt:

I am a Director of Special Projects for Santa Paula Elementary School District in California, and I would like to thank you for your leadership and the leadership of the Joint Board for their strong decision to ensure that all schools will have affordable access to the Information Superhighway. I urge the FCC to fully adopt the recommendations of the Joint Board.

The discount range of 20 to 90 percent will ensure that all schools - even the poorest - have truly affordable access. The plan is also very flexible and will empower schools to select the services that work best for their educational mission. The inclusion of discounts on internal connections and Internet access is equally vital and stands to bring services directly to the classroom where students learn.

As a poor district with an overall poverty of almost 77% discount of this type will help us move technology into our schools and help prepare our children for the future. If we are to remain an international leader, all of our students must have access to technology.

As you move ahead in your deliberation on this important issue, I urge you to seize this opportunity to bring 21st century learning to our students.

Sincerely.

Edward K. Kessler

Director of Special Projects

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Barbara Webster School 933-5315 Blanchard School 933-5381 Glen City School 933-5376 Grace Thille School 933-5372 Isbell Middle School 933-5329

McKevett School 933-5332 Thelma Bedell School 933-5355 Child Care Services 933-5375 Special Projects 933-5304

Superintendent 933-5342 Educational Services 933-5341

Business Services 933-5307 Special Services 933-5336

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TONAWANDA CITY SCHOOL DISTRICT ADMINISTRATION BUILDING

FEDERAL COMMUNICATIONS COMMISSION OFFICE OF SECRETARY

202 BROAD STREET

TONAWANDA, NEW YORK 14150-2098

JAMES C. HOLLER Superintendent (716) 694-7784

January 8, 1997

The Honorable Reed Hundt Chairman Federal Communications Commission 1919 M Street, N.W., Room 814 Washington, D.C. 20554

RE: CC Docket No. 96-45

Dear Chairman Hundt:

On behalf of the Tonawanda City School District Board of Education, I would like to thank you for your leadership and the leadership of the Joint Board for their strong decision to ensure that all schools will have affordable access to the Information Superhighway. I urge the FCC to fully adopt the recommendations of the Joint Board.

The discount range of 20 to 90 percent will ensure that all schools--even the poorest--have truly affordable access. The plan is also very flexible and will empower schools to select the services that work best for their educational mission. The inclusion of discounts on internal connections and Internet access is equally vital and stands to bring services directly to the classroom where students learn.

Currently we have in place a technology plan that is achieved only if we have necessary funding and support provided in the proposed resolution.

As you move ahead in your deliberation on this important issue, I urge you to seize this opportunity to bring 21st century learning to our schoolchildren.

Sincerely/yours

James C. Holler

Superintendent of Schools

pc: Senator John LaFalce Congressman Jack Quinn No. of Copies rec'd

Corvallis School District #1 Phone 961-4211 • Fax 961-5144

K. W. MAKI Superintendent, 961-4211 LINDA VON LAVEN Special Services, 961-3962 DONNA L. MELLO District Clerk, 961-4211



SARAH SCHUMACHER 9-12 Principal, 961-3201 THOMAS MILLER 5-8 Principal, 961-3007 MARION DALEY K-4 Principal, 961-3261

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FEDERAL COMPRODICATIONS COMMISSION

OFFICE OF SECRETARY

January 6, 1996

TO: The Honorable Reed Hundt, Chairman Federal Communications Commission

FROM: K. W. Maki

SUBJECT: CC DOCKET NO. 96-45

DISCOUNTS ON ALL TELECOMMUNICATIONS SERVICES TO SCHOOLS & LIBRARIES

Corvallis School District #1 appreciates positive leadership which will ensure affordable access to the Information Superhighway for all schools. A discount on all telecommunications services including installation and monthly fees is essential. We strongly urge the Federal Communications Commission to fully adopt the recommendations of the Joint Board.

The Corvallis school system is an underfunded school and currently receives State assistance. Discounts on telecommunication services will provide additional opportunities for our school to assemble the educational tools required for a quality education.

All students (Corvallis and the U.S.) must receive a comprehensive educational program. Students must be able to compete on a state, national, and international level. The recommendations of the Joint Board provide an opportunity to bring both equity and 21st century learning to our students.

Thank you.

km/ls

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Walla Walla Public Schools

364 South Park Street Walla Walla, Washington 99362-3293



January 6, 1997

EX PARTE OR LATE FILED The Honorable Reed Hundt Chairman Federal Communications Commission 1919 M Street NW Room 814 Washington DC 20554

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JAN#1 6 1997

FEDERAL C MAMUNICATIONS COMMISSION

OFFICE OF SECRETARY

Re: CC Docket No. 96-45

Dear Chairman Hundt:

I am a member of the Walla Walla School District Board of Directors and I am writing to thank you for your leadership and that of the Joint Board for acting to ensure all schools an affordable access to the Information Superhighway. I urge the FCC to adopt in full the recommendations of the Joint Board.

The discount range of 20 to 90 percent will enable all schools affordable access. The proposed plan is very flexible and will assist schools to select services to fulfill their education technology goals. Including discounts on internal connections and Internet access is equally significant and will help provide information directly to the classroom and learning environment.

The Walla Walla School District has a technology action plan in place and is implementing a five-year plan to provide training, software, and equipment to staff and students as quickly as possible, pending fiscal assistance. We intend to propose a technology levy to our community on the May 1997 ballot; the FCC's acceptance of the Joint Board's recommendations will be invaluable to our school district in the realization of our technology plan and goals for preparing our students for their future in higher education and the work place.

I urge your serious consideration and favorable vote on the recommendations of the Joint Board to provide discounts to schools for telecommunications services.

Jeanne Beirne

Jeanne Beirne. President **Board of Directors**

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... Making A Difference

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January 3, 1997

FEDERAL COMMUNICATIONS COMMISSION OFFICE OF SECRETARY

The Honorable Reed Hundt, Chairman **Federal Communications Commission** 1919 M Street, N.W., Room 814 Washington, D.C. 20554

RE: CC Docket No. 96-45

Dear Chairman Hundt:

As a member of the Ferndale School Board, I would like to take the opportunity to thank you for your leadership and the leadership of the Joint Board in your decision to ensure that all public schools will have affordable access to the vast information highway. On behalf of the school board, I urge the FCC to fully adopt the recommendations of the Joint Board.

With a discount range of twenty to ninety percent, even the poorest of schools will have truly affordable access to technology. The education rate plan is flexible and will empower schools to select the services that work best for their educational needs. Also vital to this plan is the inclusion of discounts on internal connections and Internet access which will bring services directly to the classroom where students learn.

The Ferndale School District voters recently passed a technology capital projects levy which will expand the district's phone and computer network services. The Joint Board's plan would enhance the upgrade of existing analog to digital telephone network, allow instructional opportunities for students to be expanded through a wide area network between district schools and local area networks within school buildings, and provide voice mail, e-mail, and instructional computing resources to increase the productivity of our schools while at the same time increasing the interaction between staff and parents.

As you move ahead in your deliberation on this important issue, I urge you to seize this opportunity to bring 21st century learning to our school children so they may benefit from a rich array of local, national, and global resources.

Kimmeron Poster

School Board Member

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KP:tg

South Fayette Township School Bistrict



2250 OLD OAKDALE ROAD McDONALD, PENNSYLVANIA 15057 (412) 221-4542 FAX (412) 693-2883 DOCKET FILE COPY ORIGINAL

LINDA B. HIPPERT
Superintendent

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FEDERAL COMMISSION COMMISSION OFFICE OF SECRETARY

January 8, 1997

The Honorable Reed Hundt, Chairman Federal Communications Commission 1919 M Street, N.W., Room 814 Washington, D.C. 20554

RE: CC Docket No. 96-45

Dear Chairman Hundt:

I am a school board member from the South Fayette Township School District, and I would like to thank you for your leadership of the Joint Board for their strong decision to ensure that all schools will have affordable access to the Information Superhighway. I urge the FCC to fully adopt the recommendations of the Joint Board.

The discount range of 20 to 90 percent will ensure that all schools--even the poorest--have truly affordable access. The plan is also very flexible and will empower schools to select the services that work best for their educational mission. The inclusion of discounts on internal connections and Internet access is equally vital and stands to bring services directly to the classroom where students learn. Monies saved through this discount will afford South Fayette Township School District the opportunity to focus on the integration of the technology into the curriculum so that students may achieve at higher levels. This, of course, is the ultimate goal of all districts.

As you move ahead in your deliberation on this important issue, I urge you to seize this opportunity to bring 21st century learning to our schoolchildren.

Sincerely,

Joseph R. Babish chool Board Director

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South Fayette Township School Bistrict



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January 8, 1997

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LINDA B. HIPPERT
Superintendent

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

The Honorable Reed Hundt, Chairman Federal Communications Commission 1919 M Street, N.W., Room 814 Washington, D.C. 20554

RE: CC Docket No. 96-45

Dear Chairman Hundt:

I am a school board member from the South Fayette Township School District, and I would like to thank you for your leadership of the Joint Board for their strong decision to ensure that all schools will have affordable access to the Information Superhighway. I urge the FCC to fully adopt the recommendations of the Joint Board.

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As you move ahead in your deliberation on this important issue, I urge you to seize this opportunity to bring 21st century learning to our schoolchildren.

Sincerely,

Warren Miller School Board Director

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South Fayette Township School Bistrict



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LINDA B. HIPPERT Superintendent

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

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As you move ahead in your deliberation on this important issue, I urge you to seize this opportunity to bring 21st century learning to our schoolchildren.

Sincerely,

Thomas C. Welch

Thomas Welch School Board Director

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South Fayette Township School Pistrict



2250 OLD OAKDALE ROAD McDONALD, PENNSYLVANIA 15057 (412) 221-4542 FAX (412) 693-2883 DOCKET FILE COPY ORIGINAL

LINDA B. HIPPERT Superintendent

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OFFICE OF SECRETARY

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January 8, 1997

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As you move ahead in your deliberation on this important issue, I urge you to seize this opportunity to bring 21st century learning to our schoolchildren.

Sincerely,

Leonard Fornella School Board Treasurer

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